

EXERCISE RX

Strength and Flexibility for Older Patients, Part 3: Knees

The looseness or tightness of the leg and hip muscles can have an enormous impact on knee pain.

The quadriceps and hamstrings maintain about 30% of the knee joint's stability. If a patient complains of knee pain and avoids moving the knee at all, those muscles will atrophy and eventually make the pain worse. There is evidence that people with knee problems who keep the hips loose and maintain strength in the leg muscles—especially the quadriceps—function quite well despite mild knee pain.

In addition, patients who might be candidates for knee replacement surgery can delay it for many years simply by keeping

the leg muscles strong and loose. As the population ages, this stands out an important consideration.



BY WILLIBALD NAGLER, M.D.

Most people aged 60 years and older have some osteoarthritis in their knees, but limber muscles can relieve pain over the long term. These patients should not avoid exercise, but should ease gradually into new activities.

The knee, though primarily a joint with a hingelike action, has the ability to rotate slightly inward, which makes it remarkably versatile but also susceptible to injury. Strong quadriceps muscles help keep the joint in place from the front, while hamstrings do the same from the rear, so

it's important to strengthen both sets of muscles using similar amounts of weight.

In this month's column, we'll look at some exercises to help older patients prevent or relieve knee pain. (See illustrations and instructions for patients below.)

Patients who are very sedentary should start without any weights, but if it feels easy, they should begin with very light weights and build up gradually until the last few repetitions of the last set are a bit difficult.

For best results, do this series of exercises daily, 6 days per week, with 1 rest day. Start by doing the exercises twice daily for 2 or 3 weeks, then reduce to once daily, either in the morning or at night, to maintain the knees' natural support system and reduce the risk of injuries. Loosening and strengthening the muscles gradually, over time, also adds to the

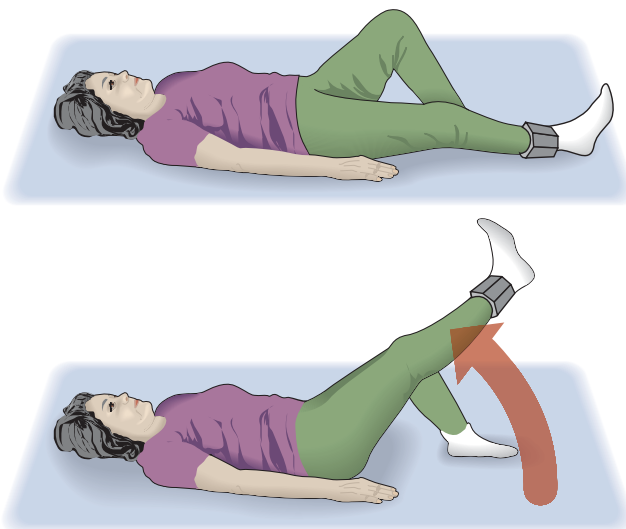
knees' ability to rebound more quickly if a problem develops.

There are truly no contraindications for these exercises. Knee injuries should not be ignored, but they rarely constitute medical emergencies. Even patients with some swelling in the knee won't make the condition any worse by doing strengthening exercises, and they can, and should, put ice on the knees afterward. Obviously, patients who have extreme or persistent swelling in the knees should use ice to relieve the pain and swelling, keep weight off the knee, and obtain an expert's diagnosis before attempting these exercises.

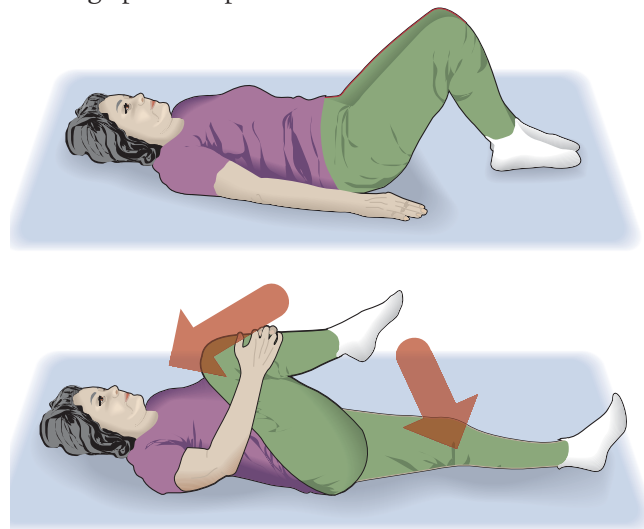
Next month: Exercises to help recovery after cancer surgery.

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Exercise Rx: Knees

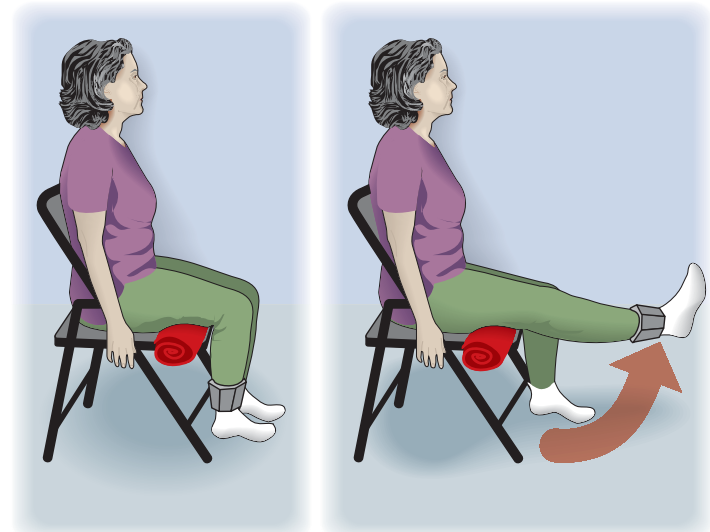


▼ **Hip flexor stretches.** Tight hips can contribute to knee pain so hip stretches are an important part of knee strengthening. Lie flat on your back on a carpeted floor with both knees bent, feet flat on the floor. Bring your right knee to your chest, wrapping your hands around your lower leg (above the ankle). Slide your left leg out to a straight position, trying to touch the floor with the back of your knee. Hold for 5 seconds, then slowly release both legs back to the starting position. You should feel the stretch on the inner thigh of the extended leg. Repeat 5 times on each leg, working up to 12 repetitions.



◀ **Supine leg extensions.** Lie on your back on a carpeted floor, arms at your sides, legs straight in front of you. Bend your left leg, placing that foot on the floor. Keeping the right foot cocked upward and flexed, raise the right leg to about 45 degrees. Hold that position for 5 seconds, then slowly lower leg to the floor. Keep the knee of the extended leg in a straight and locked position throughout the exercise, and concentrate on contracting the muscle just above the kneecap. Start with 8-12 repetitions. Switch legs and repeat. Do two sets with each leg. Patients who have been very inactive should do this without weights.

▶ **Hamstrings.** Sit on the edge of a bed with your left foot stretched out on the bed and your right foot on the floor. Flex your left foot and point your toes up. Place your hands on your left knee and bend forward from the hips, keeping your foot cocked up (don't let the leg roll inward or outward). Attempt to grasp your foot with your hands and ease your forehead toward your shin.



▲ **Seated leg extensions.** Sit on a straight-backed chair, feet flat on the floor. Place a rolled-up towel under the hamstrings, behind the knees, to keep the chair edge from digging into the back of your leg and to provide traction. Flex the right foot and raise your lower leg until it is parallel with the floor. Hold for 5 seconds and slowly lower down. Repeat 8-12 times. Relax, and repeat with the left leg. Start with two sets, and work up to three sets of 12 repetitions. Be sure your feet are cocked up and pointed slightly outward—not pigeon-toed—to avoid unnecessary strain on the knee joint.

